

## NORTH AMERICAN DIXIDÆ.

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Some years ago I published a key to the species of *Dixa* (Bull. New York State Museum, 68:431, 1903) based largely on the color characters given in the descriptions. Through the kindness of Mr. Nathan Banks I have recently had the opportunity to compare my specimens with the Loew types in the Museum of Comparative Zoology at Cambridge, and now offer a new table which includes three new species.

A study of a series of specimens collected at the same time and place, having similar color characters, and an identical type of hypopygium, therefore presumably one species, shows that the venation of the wings in this genus is subject to some variation, for which allowance must be made in identification. The length of the fork of the media is particularly variable. In one wing of one of the type specimens of *D. fusca* Lw. the petiole and the fork are nearly subequal in length while in the other wing of this specimen and in both wings of the second specimen the petiole is noticeably longer than the anterior branch of the fork. In *D. cornuta* described below, a species having a very characteristically formed clasper, the variation in the proportions is even greater.

*Key to species of Dixa.*

- a. Costal half of the wing distinctly smoky; a dark spot at the apex of Cu 2; proboscis and scutellum yellow; knob of halteres black. D. C. . . . *marginata* Lw.
- aa. Costal part of the wing not distinctly differentiated in color.
  - b. Tips of the hind tibiæ noticeably enlarged, deep black, sharply contrasting with the remainder of the member; wing veins with clouded margins; proboscis black; halteres yellowish; scutellum fuscous testaceous; terminal clasper segment tapering, mesal process of the basal segment simple, elongate.(fig. 2)Me., Mass., N.Y, *clavata* Lw.

- bb. Tips of hind tibiæ not so sharply differentiated.
- c. Petiole of R2+3 (measured on a straight line from its base to base of fork), less than  $\frac{3}{8}$  as long as R3; proboscis, scutellum, and knob of the halteres yellow; crossvein of wing very feebly clouded; r-m crossvein slightly distad of the base of R4+5. N. Y., *terna* Lw.
- cc. With other characters.
- d. Wing with one or more spots.
- e. The space between the bases of the cubitus and anal vein, between the branches of the cubitus, and the basal part of the anal lobe infuscated; terminal clasper segment triangular, mesal process of basal segment forked (fig. 1), *californica* n. sp.
- ee. With but a single, rather distinct spot on the wing.
- f. Petiole of R 2+3 and R3 subequal in length, wing spot very distinct, veins strongly marked; proboscis and scutellum blackish; halteres sordidly yellow; terminal clasper segment not tapering, truncate apically, mesal process of basal segment forked (fig 6). Me., N. Y. *centralis* Lw.
- ff. Petiole shorter; proboscis, scutellum, and halteres yellow, N. J.; Md. . . . *notata* Lw.
- dd. Wing spot very indistinct or wanting.
- e. The r-m crossvein is situated slightly proximad of the base of R4+5 thus intersecting the petiole of the radial sector; Sc endsopposite the base of Rs. St. Vincent Is. *calvula* Will.
- ee. The r-m crossvein is situated at or slightly distad of the base of R4+5 thus connecting this vein with the media.
- f. Dorsum of the thorax yellowish with thoracic darker stripes which may be more or less confluent; palpi dark.
- g. Proboscis yellow; scutellum and halteres blackish; wing veins strongly marked, subcosta ends opposite to base of Rs; thoracic stripes black and more or less confluent, large part of the pleura yellow. Texas *venosa* Lw.

- gg. Proboscis dark; scutellum yellowish; wing veins not unusually pronounced; intervals between the thoracic stripes yellow.
- h. Fore basitarsus about  $\frac{2}{3}$  as long as the tibia; Sc ends proximad of the base of Rs; knob of the halteres dark; basal segment of the clasper of the male with a black, ventrad projecting, and much curved mesal process (fig. 4). N. Y. . . . . *cornuta* n. sp.
- hh. Fore basitarsus about  $\frac{3}{4}$  as long as the tibia.
  - i. Apical segment of the clasper of the male fully as broad beyond the middle as at the base (fig. 3); Sc ends about opposite the base of Rs; distance between the crossveins measured on the media usually not exceeding  $\frac{1}{2}$  the length of the m-cu crossvein. N.Y., N. C., Cal. . . . . *modesta* Joh.
  - ii. Apical segment of the clasper tapering (fig. 7); Sc ends distinctly proximad of the base of Rs; distance between the crossveins about equal to the length of the m-cu crossvein. N. Y. . . . . *similis* n. sp.
- ff. Dorsum of the thorax as well as the upper part of the pleura, black; proboscis, halteres and scutellum dark; Sc ends opposite the base of the radial sector. N. Y. . . . . *fusca* Lw.

### **Dixa californica** sp. nov.

Male. Head black, proboscis, palpi, and flagellum of antennæ brown, basal antennal segments light brownish. Dorsum of the thorax and upper part of the pleura, yellow; dorsal stripes rich dark brown, nearly confluent, laterals anteriorly, median one posteriorly abbreviated; scutellum, metanotum, and larger part of pleura brown. Abdomen black; the mesal process of the basal clasper segment forked; the apical segment in ventro-lateral aspect more or less triangular, apically with acute angle, mesally with a number of stout black setæ (fig. 1).

Legs yellowish brown, becoming darker towards their extremities; tips of femora and of tibiae darker; coxæ yellow; fore barsitarsus nearly  $7/8$  as long as the tibia. Wings grayish hyaline, a distinct cloud covering the r-m crossvein extending up on the petiole of  $R_2+3$ ; space between the petiole of the cubitus and the anal vein, between the branches of the cubitus, and basal part of the anal angle more or less infuscated; veins yellowish brown; Sc ends opposite the base of  $R_s$ , petiole of  $R_2+3$  (measured on a straight line from its base to base of fork) .64 as long as  $R_3$ , petiole of the media measured from the crossvein 1.3 as long as  $M_1+2$ , the distance between the cross veins  $2/3$  as long as the m-cu crossvein. Halteres brownish with yellow peduncle. Length 2.5 mm. Type in my collection. Stanford University, Cal., March.

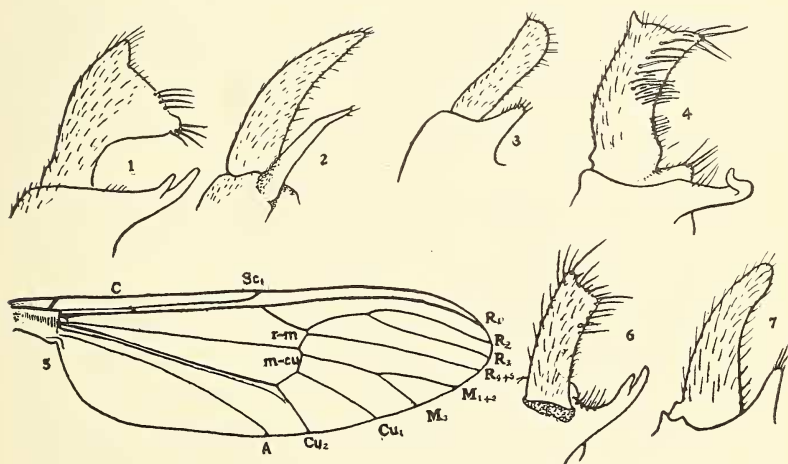


Fig. 1. Claspers of males. Figs. 1, 3, 7 are in ventro-lateral aspect; 2, 4, 6 in ventral aspect. 1. *D. californica*. 2. *D. clavata*. 3. *D. modesta*. 4. *D. cornuta*. 6. *D. centralis*. 7. *D. similis*. 5. Wing of male *D. modesta*.

### *Dixa cornuta* sp. nov.

Male. Head, including proboscis, palpi and antennæ, brown, front shining. Thorax, including scutellum, brownish yellow, with three dull, dark brown lines, the middle one divided by a

hair line, the laterals abbreviated anteriorly; metanotum and sternopleura pale brown. Abdomen blackish; the basal segment of the clasper yellow, moderately swollen, with a black, elongate, ventrad projecting and much curved mesal horn-like process; terminal segment of clasper viewed from the ventral side elongate as shown in fig. 4 with rows of ventro-mesal black spines; when viewed from the side, quadrangular, shaped somewhat like that of *D. californica* (fig. 1) but with the mesal angle much truncated and more spinous. Legs brownish yellow, extreme tips of tibiae and of tarsi darker, the hind tibiae distinctly swollen at tip; fore basitarsus about  $\frac{2}{3}$  as long as the corresponding tibia. Wings hyaline, very faintly cinereous, veins yellowish, crossveins not clouded; Sc ends slightly before base of Rs; petiole of R2+3 (measured on a straight line from its base to base of fork) about 0.4 as long as R3; petiole of the media measured from the crossvein, about 1.12 as long as M1+2. Halteres dark with yellow peduncle. Length 2.5 mm. Holotype in my collection. McLean, N. Y. October.

Female. In coloring like the male. Allotype in my collection. Ithaca, N. Y. August.

Paratypes from Ithaca, N. Y., October, and from Orono, Me., June. In the Cornell University Collection and in the Museum of Comparative Zoology, Cambridge, Mass.

The coloring is rather constant, except in teneral specimens. In the paratypes the venation is rather variable. The ratio measurement, as defined above for the radius, ranges from .36 to .50 in male specimens while the ratio measurements of the media ranges between 1.12 and 2.1. The distance between the bases of the crossveins measured along the media, is in most cases nearly equal to the length of the m-cu crossvein. The fore tibia-tarsus ratio ranges between .61 and .71, with an average of .65.

#### *Dixa modesta* Joh.

Too hastily, in the Entomological News (14:302), I declared this species to be the same as *D. clavula* Will. A careful examination of a co-type specimen of Williston's species shows

*modesta* to be quite distinct, as indicated sufficiently in the key. To my original description may be added that Sc ends about opposite or slightly beyond, or at most but slightly proximad of the base of the radial sector (fig. 5); the petiole of R2+3 (measured in a straight line) is about .55 as long as R3; the petiole of the media, measured from the crossvein, about equal to M1+2; the distance between crossveins along the media less than  $1/2$  as long as the m-cu crossvein. In the western specimen there is a very faint suggestion of a cloud on the r-m crossvein. The fore basitarsus is about  $3/4$  as long as the tibia. The basal clasper segment is somewhat enlarged, mesal process short with some stout apical setæ; apical segment broadest beyond the middle when viewed from the side, thence tapering to the tip; viewed more ventrally the sides are more or less parallel (fig. 3).

Specimens from Ithaca N. Y., April, May; Black Mts., N. C. May; and S. Jacinto Pk., Cal., August. Type in my collection.

### ***Dixa similis* sp. nov.**

Closely resembling *D. modesta*, differing chiefly in the characters given in the key.

Male. Head including proboscis, palpi, and antennæ, brown; front shining. Thorax including scutellum, yellow, with three dull dark brown stripes, the middle one divided by a hair line, the laterals abbreviated anteriorly; metanotum and lower part of the pleura brown. Abdomen brown, including the globose basal segment of the clasper whose mesal process is simple and provided with a few stout apical setæ (fig. 7); terminal segment rather tapering when viewed more or less from the side. Legs yellow, tarsi and tips of hind tibiæ a little darker; fore basitarsus about  $3/4$  as long as the corresponding tibia. Wings hyaline, very faintly cinereous, veins yellowish, crossvein not clouded; Sc ends in the costa at least the length of the r-m crossvein proximad of the base of the radial sector, the distance between the crossveins measured along the media about equal to the length of the m-cu cross vein; petiole of R2+3 (measured in



a straight line from its base to the base of the fork) about .55 as long as R3; petiole of the media measured from the cross-vein about 1.25 as long as M1+2. Halteres yellow. Tengt, 2.5 mm. Holotype in my collection. Ithaca, N. Y., August.

Female. In coloring like the male. Allotype in my collection. Ithaca, N. Y., August.

Paratypes collected at the same time and place in the Cornell University collection and in the Museum of Comparative Zoology at Cambridge, Mass. The radius ratio in the paratype specimens varies from .44 to .66, the media ratio from 0.8 to 1.3.